Watchdog™ Super Elite
BUCKET ELEVATOR & BELT CONVEYOR
HAZARD MONITORING SYSTEM

Operation Manual Supplement

SENSOR WIRING DIAGRAMS
Part No.’s - WDC4V4C, WDC4V46C

www.go4b.com/usa
**DANGER**

Exposed moving parts will cause severe injury or death.

Lockout power before removing cover or inspection door.

**WARNING**

Rotating parts can crush, cut and entangle.

Do NOT operate with guard removed.

Lockout power before removing guard or servicing.
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Dear 4B Customer:

Congratulations on your purchase. 4B appreciates your business and is pleased you have chosen our products to meet your needs.

Please read in its entirety and understand the literature accompanying the product before you place the product into service. Please read the safety precautions carefully before operating the product. With each product you purchase from 4B, there are some basic but important safety considerations you must follow to be sure your purchase is permitted to perform its design function and operate properly and safely, giving you many years of reliable service. Please read and understand the Customer Safety Responsibilities listed below. Failure to follow this safety directive and the Operation Manuals and other material furnished or referenced, may result in serious injury or death.

**SAFETY NOTICE TO OUR CUSTOMERS**

A. In order to maximize efficiency and safety, selecting the right equipment for each operation is vital. The proper installation of the equipment, and regular maintenance and inspection is equally important in continuing the proper operation and safety of the product. The proper installation and maintenance of all our products is the responsibility of the user unless you have asked 4B to perform these tasks.

B. All installation and wiring must be in accordance with Local and National Electrical Codes and other standards applicable to your industry. (Please see the article “Hazard Monitoring Equipment Selection, Installation and Maintenance” at www.go4b.com.) The installation of the wiring should be undertaken by an experienced and qualified professional electrician. Failure to correctly wire any product and/or machinery can result in the product or machine failing to operate as intended, and can defeat its design function.

C. Periodic inspection by a qualified person will help assure your 4B product is performing properly. 4B recommends a documented inspection at least annually and more frequently under high use conditions.

D. Please see the last page of this manual for all warranty information regarding this product.

**CUSTOMER SAFETY RESPONSIBILITIES**

1. **READ ALL LITERATURE PROVIDED WITH YOUR PRODUCT**

Please read all user, instruction and safety manuals to ensure that you understand your product operation and are able to safely and effectively use this product.

2. **YOU BEST UNDERSTAND YOUR NEEDS**

Every customer and operation is unique, and only you best know the specific needs and capabilities of your operation. Please call the 24-hour hotline at 309-698-5611 for assistance with any questions about the performance of products purchased from 4B. 4B is happy to discuss product performance with you at any time.
3. SELECT A QUALIFIED AND COMPETENT INSTALLER
Correct installation of the product is important for safety and performance. If you have not asked 4B to perform the installation of the unit on your behalf, it is critical for the safety of your operation and those who may perform work on your operation that you select a qualified and competent electrical installer to undertake the installation. The product must be installed properly to perform its designed functions. The installer should be qualified, trained, and competent to perform the installation in accordance with Local and National Electrical Codes, all relevant OSHA Regulations, as well as any of your own standards and preventive maintenance requirements, and other product installation information supplied with the product. You should be prepared to provide the installer with all necessary installation information to assist in the installation.

4. ESTABLISH AND FOLLOW A REGULAR MAINTENANCE AND INSPECTION SCHEDULE FOR YOUR 4B PRODUCTS
You should develop a proper maintenance and inspection program to confirm that your system is in good working order at all times. You will be in the best position to determine the appropriate frequency for inspection. Many different factors known to the user will assist you in deciding the frequency of inspection. These factors may include but are not limited to weather conditions; construction work at the facility; hours of operation; animal or insect infestation; and the real-world experience of knowing how your employees perform their jobs. The personnel or person you select to install, operate, maintain, inspect or perform any work whatsoever, should be trained and qualified to perform these important functions. Complete and accurate records of the maintenance and inspection process should be created and retained by you at all times.

5. RETAIN AND REFER TO THE OPERATION MANUAL FOR 4B’S SUGGESTED MAINTENANCE AND INSPECTION RECOMMENDATIONS
As all operations are different, please understand that your specific operation may require additional adjustments in the maintenance and inspection process essential to permit the monitoring device to perform its intended function. Retain the Operation Manual and other important maintenance and service documents provided by 4B and have them readily available for people servicing your 4B equipment. Should you have any questions, please call the free 24-hour hotline number (309-698-5611).

6. SERVICE REQUEST
If you have questions or comments about the operation of your unit or require the unit to be serviced please contact the 4B location who supplied the product or send your request via fax (309-698-5615) or call us via our 24-hour hotline number in the USA (309-698-5611). Please have available product part numbers, serial numbers, and approximate date of installation.
ELECTRICAL CONNECTION

All wiring must be in accordance with local and national electrical codes and should be undertaken by an experienced and qualified electrician.

Always use dust/liquid tight flexible metal conduit with approved fittings to protect the sensor cables. Use rigid metal conduit to protect the cables from the sensors to the control unit. Conduit systems can channel water due to ingress and condensation directly to sensors and sensor connections which over time will adversely affect the performance of the system. As such, the installation of low point conduit drains is recommended for all sensors.

All electrical connections are made via 3 sets of terminals provided as shown in image 1.

FUSE RATINGS -

In order to maintain the product certification, all fuses MUST be replaced with equivalent fuses at the same rating. Failure to do so will invalidate the certification and any warranties which may exist.

Model WDC4V4C -
• F1, F2, F3, F5 200 mA maximum.
• F1 to F3 are used to limit the current available to the sensor inputs.
• F5 is used to limit the current available to the internal electronics.
• F6 is not used.

Model WDC4V46C -
• F1 to F3 2 amp maximum, used to limit the current available to the sensor inputs.
• F5 200 mA, used to limit the current available to the internal electronics.
• F6 2 amp maximum, used to protect the AC power supply.

NOTE

To calibrate speed and utilize the Watchdog’s built-in alarm and shut-down capabilities, a motor interlock (run) signal is required. For typical motor interlock wiring examples, review the wiring diagrams for terminals 6 & 7 in the WDC4 manual (section 9).

NOTE

Recommended cable type is Belden 5508FE with 10 conductors each 22 AWG, shielded. Overall outer diameter is 0.23 inches. Belden 5508FE wire colors are used in all of the sensor wiring diagrams.
WARNING

The unit should ONLY be powered with either a main supply (WDC4V46C model) OR a 24 VDC (WDC4V4C and WDC4V46C models) NOT BOTH.

FIELD WIRING CONNECTIONS

44 - 0 VDC
43 - Speed Sensor
42 - Pulley Sensor
41 - Plug Sensor
40 - Head Rub - Right
39 - Head Rub - Left
38 - Head Align - Right
37 - Head Align - Left
36 - 24 VDC (Fuse F1)
35 - 0 VDC
34 - Tail Rub - Right
33 - Tail Rub - Left
32 - Tail Align - Right
31 - Tail Align - Left
30 - 24 VDC (Fuse F2)
29 - 0 VDC
28 - Bearing Sensor 6
27 - Bearing Sensor 5
26 - Bearing Sensor 4
25 - Bearing Sensor 3
24 - Bearing Sensor 2
23 - Bearing Sensor 1
22 - Ambient Sensor 2
21 - Ambient Sensor 1
20 - 24 VDC (Fuse F3)

POWER & RELAY CONNECTIONS

06 - Motor Starter Interlock (-)
07 - Motor Starter Interlock (+)
08 - Alarm Relay Normally Open
09 - Alarm Relay Normally Closed
10 - Alarm Relay Common
11 - Stop Relay Normally Open
12 - Stop Relay Normally Closed
13 - Stop Relay Common
14 - 120 to 240 VAC Connection
15 - VAC Neutral Connection
16 - Ground or 0 Volt Connection
17 - 24 VDC Connection (+)
18 - 24 VDC Connection (-)
SELECT NEW PROFILE -

MENU > SETUP (PASSWORD) > PROFILE > SELECT NEW PROFILE

To help make the set up process easier for bucket elevator legs, four pre-set program profiles are available to choose from (Image 2). All four profiles are highlighted in RED at the top of each wiring diagram (xxxxx). Refer to section 14 of the WDC4 Watchdog Super Elite product manual for more information regarding sensor settings.

1. LEG (TS) / 1 SP, 4BS, 4TS
   • 1 Speed Sensor
   • 4 Bearing Temperature Sensors
   • 4 Touchswitch Sensors (Alignment)

2. LEG (RB) / 1SP, 4BS, 4RB
   • 1 Speed Sensor
   • 4 Bearing Temperature Sensors
   • 4 Rub Block Sensors (Alignment)

3. LEG (WDA) 4MA, 4BS
   • 4 Motion Alignment Sensors
   • 4 Bearing Temperature Sensors

4. LEG (TS) / 1SP, 6BS, 6TS
   • 1 Speed Sensor
   • 6 Bearing Temperature Sensors
   • 6 Touchswitch Sensors (Alignment)

NOTE

All pre-set program profiles default to the factory settings. To modify settings from the factory defaults, go to the EDIT SELECTED PROFILE menu.
TYPICAL SENSOR PLACEMENT FOR BUCKET ELEVATORS

SPEED MONITORING
Qty. 1 - One sensor located on either side of the tail or boot shaft.

BEARING TEMPERATURE
Qty. 4 - One sensor for the bearings at each end of the drive and tail or head and boot shafts.

BELT MISALIGNMENT
Qty. 4 - Sensors work in pairs, one for each side of the belt on the drive and tail or head and boot sections.

PLUG INDICATION
Qty. 1 - One sensor located near the top of the drive section or spouting by the discharge.
NOTE

This wiring diagram is for end users upgrading their WDC3 Watchdog to the WDC4 Watchdog Super Elite. This basic diagram provides a quick terminal reference between the two models.

<table>
<thead>
<tr>
<th>WDC3</th>
<th>WDC4</th>
<th>WDC4 Terminal</th>
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<tbody>
<tr>
<td>1</td>
<td>44</td>
<td>0 VDC</td>
</tr>
<tr>
<td>----</td>
<td>43</td>
<td>Speed Sensor</td>
</tr>
<tr>
<td>----</td>
<td>42</td>
<td>Pulley Sensor</td>
</tr>
<tr>
<td>----</td>
<td>41</td>
<td>Plug Sensor</td>
</tr>
<tr>
<td>----</td>
<td>40</td>
<td>Head Rub - Right (T#12)</td>
</tr>
<tr>
<td>----</td>
<td>39</td>
<td>Head Rub - Left (T#11)</td>
</tr>
<tr>
<td>3A</td>
<td>38</td>
<td>Head Align - Right</td>
</tr>
<tr>
<td>2A</td>
<td>37</td>
<td>Head Align - Left</td>
</tr>
<tr>
<td>5 (1)</td>
<td>36</td>
<td>+24 VDC (F1)</td>
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</table>

<table>
<thead>
<tr>
<th>WDC3</th>
<th>WDC4</th>
<th>WDC4 Terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>35</td>
<td>0 VDC</td>
</tr>
<tr>
<td>----</td>
<td>34</td>
<td>Tail Rub - Right (T#10)</td>
</tr>
<tr>
<td>----</td>
<td>33</td>
<td>Tail Rub - Left (T#9)</td>
</tr>
<tr>
<td>3B</td>
<td>32</td>
<td>Tail Align - Right</td>
</tr>
<tr>
<td>2B</td>
<td>31</td>
<td>Tail Align - Left</td>
</tr>
<tr>
<td>5 (1)</td>
<td>30</td>
<td>+24 VDC (F2)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WDC3</th>
<th>WDC4</th>
<th>WDC4 Terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>----</td>
<td>29</td>
<td>0 VDC</td>
</tr>
<tr>
<td>----</td>
<td>28</td>
<td>Bearing Temp Sensor (T#6)</td>
</tr>
<tr>
<td>----</td>
<td>27</td>
<td>Bearing Temp Sensor (T#5)</td>
</tr>
<tr>
<td>4D</td>
<td>26</td>
<td>Bearing Temp Sensor (T#4)</td>
</tr>
<tr>
<td>4C</td>
<td>25</td>
<td>Bearing Temp Sensor (T#3)</td>
</tr>
<tr>
<td>4B</td>
<td>24</td>
<td>Bearing Temp Sensor (T#2)</td>
</tr>
<tr>
<td>4A</td>
<td>23</td>
<td>Bearing Temp Sensor (T#1)</td>
</tr>
<tr>
<td>----</td>
<td>22</td>
<td>Ambient Sensor 2 (T#8)</td>
</tr>
<tr>
<td>----</td>
<td>21</td>
<td>Ambient Sensor 1 (T#7)</td>
</tr>
<tr>
<td>----</td>
<td>20</td>
<td>+24 VDC (F3)</td>
</tr>
</tbody>
</table>
2. SENSOR WIRING DIAGRAM PROFILE WITH TOUCHSWITCHES -

MENU > SETUP (PASSWORD) > PROFILE > SELECT NEW PROFILE > LEG (TS)/ 1SP, 4BS, 4TS

Alignment Top (Head)
- Black
- Orange
- White
- Blue
- Red
- Green

Alignment Bottom (Tail)
- Black
- Orange
- White
- Blue
- Red
- Green

Speed
- White
- Blue
- Brown
- Black

Bearing Top (Head)
- Black
- Brown

Bearing Bottom (Tail)
- Black
- Brown

| No Connection | Insulate and Do NOT Connect |
4. SENSOR WIRING DIAGRAM PROFILE WITH MOTION ALIGNMENT SENSORS -

MENU > SETUP (PASSWORD) > PROFILE > SELECT NEW PROFILE > LEG (WDA) 4MA, 4BS

**Alignment Top (Head)**

- **Red**
- **Orange**
- **Green**
- **Black**
- **Blue**
- **White**

**Motion Alignment Sensor**

- **Red**
- **Orange**
- **Green**
- **Black**
- **Blue**
- **White**

- **No Connection**
- **Insulate and Do NOT Connect**

**Alignment Bottom (Tail)**

- **Red**
- **Orange**
- **Green**
- **Black**
- **Blue**
- **White**

**Motion Alignment Sensor**

- **Red**
- **Orange**
- **Green**
- **Black**
- **Blue**
- **White**

- **No Connection**
- **Insulate and Do NOT Connect**

**Bearing Top (Head)**

- **Right**
- **Black**
- **Brown**
- **Yellow**

- **Left**
- **Black**
- **Brown**
- **Orange**

**Bearing Bottom (Tail)**

- **Right**
- **Black**
- **Brown**
- **Yellow**

- **Left**
- **Black**
- **Brown**
- **Orange**

**Sensor Locations**

- 44 0 VDC
- 43 Speed Sensor
- 42 Pulley Sensor
- 41 Plug Sensor
- 40 Head Rub - Right (T#12)
- 39 Head Rub - Left (T#11)
- 38 Head Align - Right
- 37 Head Align - Left
- 36 +24 VDC (F1)
- 35 0 VDC
- 34 Tail Rub - Right (T#10)
- 33 Tail Rub - Left (T#9)
- 32 Tail Align - Right
- 31 Tail Align - Left
- 30 +24 VDC (F2)
- 29 0 VDC
- 28 Bearing Temp Sensor (T#6)
- 27 Bearing Temp Sensor (T#5)
- 26 Bearing Temp Sensor (T#4)
- 25 Bearing Temp Sensor (T#3)
- 24 Bearing Temp Sensor (T#2)
- 23 Bearing Temp Sensor (T#1)
- 22 Ambient Sensor 2 (T#8)
- 21 Ambient Sensor 1 (T#7)
- 20 +24 V (F3)
5. SENSOR WIRING DIAGRAM PROFILE WITH KNEE OR IDLER PULLEYS -

Menu > Setup (Password) > Profile > Select New Profile > Leg (TS)/ 1SP, 6BS, 6TS

LEG (TS)/ 1SP, 6BS, 6TS

44 0 VDC
43 Speed Sensor
42 Pulley Sensor
41 Plug Sensor
40 Head Rub - Right (T#12)
39 Head Rub - Left (T#11)
38 Head Align - Right
37 Head Align - Left
36 +24 VDC (F1)
35 0 VDC
34 Tail Rub - Right (T#10)
33 Tail Rub - Left (T#9)
32 Tail Align - Right
31 Tail Align - Left
30 +24 VDC (F2)
29 0 VDC
28 Bearing Temp Sensor (T#6)
27 Bearing Temp Sensor (T#5)
26 Bearing Temp Sensor (T#4)
25 Bearing Temp Sensor (T#3)
24 Bearing Temp Sensor (T#2)
23 Bearing Temp Sensor (T#1)
22 Ambient Sensor 2 (T#8)
21 Ambient Sensor 1 (T#7)
20 +24 VDC (F3)
7. SENSOR WIRING DIAGRAM WITH TOUCHSWITCHES AND PLUG SWITCH -

**Plug Switch**

- Blue
- Black / Red
- Black / Orange
- Black
- Brown

**Alignment Top (Head)**

- Black
- Orange
- White
- Brown
- Red
- Green

**Alignment Bottom (Tail)**

- Black
- Orange
- White
- Blue
- Red
- Green

**Speed**

- White
- Blue
- Brown
- Black

**Bearing Top (Head)**

- Black
- Brown

**Bearing Bottom (Tail)**

- Black
- Brown

**Wiring Colors**

- White
- Blue
- Brown
- Black

**Wiring Description**

- No Connection
- Insulate and Do NOT Connect

**Connection Points**

- 44 0 VDC
- 43 Speed Sensor
- 42 Pulley Sensor
- 41 Plug Sensor
- 40 Head Rub - Right (T#12)
- 39 Head Rub - Left (T#11)
- 38 Head Align - Right
- 37 Head Align - Left
- 36 +24 V (F1)
- 35 0 VDC
- 34 Tail Rub - Right (T#10)
- 33 Tail Rub - Left (T#9)
- 32 Tail Align - Right
- 31 Tail Align - Left
- 30 +24V (F2)
- 29 0 VDC
- 28 Bearing Temp Sensor (T#6)
- 27 Bearing Temp Sensor (T#5)
- 26 Bearing Temp Sensor (T#4)
- 25 Bearing Temp Sensor (T#3)
- 24 Bearing Temp Sensor (T#2)
- 23 Bearing Temp Sensor (T#1)
- 22 Ambient Sensor 2 (T#8)
- 21 Ambient Sensor 1 (T#7)
- 20 +24V (F3)
10. SENSOR WIRING DIAGRAM WITH MOTION ALIGNMENT SENSORS, PLUG SWITCH AND HEAD PULLEY SENSORS -

**Head Pulley**

**Alignment Top (Head)**
- Red
green
- Blue
- White

**Alignment Bottom (Tail)**
- Red
 - Orange
green
 - Black
 - Blue
 - White

**Plug Switch**
- Blue
 - Black / Red
 - Black / Orange
 - Black
 - Brown

**Bearing Top (Head)**
- Black
 - Brown

**Bearing Bottom (Tail)**
- Black
 - Brown

**No Connection**
Insulate and Do NOT Connect

---

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>+24V (F3)</td>
</tr>
<tr>
<td>21</td>
<td>Ambient Sensor 1 (T#7)</td>
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<td>22</td>
<td>Ambient Sensor 2 (T#8)</td>
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<tr>
<td>23</td>
<td>Bearing Temp Sensor (T#1)</td>
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<tr>
<td>24</td>
<td>Bearing Temp Sensor (T#2)</td>
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<tr>
<td>25</td>
<td>Bearing Temp Sensor (T#3)</td>
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<tr>
<td>26</td>
<td>Bearing Temp Sensor (T#4)</td>
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<td>27</td>
<td>Bearing Temp Sensor (T#5)</td>
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<tr>
<td>28</td>
<td>Bearing Temp Sensor (T#6)</td>
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<td>29</td>
<td>0 VDC</td>
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<td>30</td>
<td>+24 VDC (F2)</td>
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<td>31</td>
<td>Tail Align - Left</td>
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<td>32</td>
<td>Tail Align - Right</td>
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<tr>
<td>33</td>
<td>Tail Rub - Left (T#9)</td>
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<td>34</td>
<td>Tail Rub - Right (T#10)</td>
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<tr>
<td>35</td>
<td>0 VDC</td>
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<tr>
<td>36</td>
<td>+24 VDC (F1)</td>
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<tr>
<td>37</td>
<td>Head Align - Left</td>
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<tr>
<td>38</td>
<td>Head Align - Right</td>
</tr>
<tr>
<td>39</td>
<td>Head Rub - Left (T#11)</td>
</tr>
<tr>
<td>40</td>
<td>Head Rub - Right (T#12)</td>
</tr>
<tr>
<td>41</td>
<td>Plug Sensor</td>
</tr>
<tr>
<td>42</td>
<td>Pulley Sensor</td>
</tr>
<tr>
<td>43</td>
<td>Speed Sensor</td>
</tr>
<tr>
<td>44</td>
<td>0 VDC</td>
</tr>
</tbody>
</table>
12. SENSOR WIRING DIAGRAM WITH TOUCHSWITCHES, DIFFERENTIAL SPEED AND PLUG SWITCH -

**Alignment Top (Head)**
- Black
- Orange
- White
- Blue
- Red
- Green
- **X** No Connection

**Alignment Bottom (Tail)**
- Black
- Orange
- White
- Blue
- Red
- Green
- **X** No Connection

**Speed**
- White
- Blue
- Brown
- Black

**Bearing Top (Head)**
- Black
- Yellow
- Orange
- Brown

**Bearing Bottom (Tail)**
- Black
- Orange
- Brown

**Plug Switch**
- Blue
- Black / Orange
- Purple
- **X** No Connection

**Bearing Temp Sensor**
- T#1
- T#2
- T#3
- T#4
- T#5
- T#6

**Ambient Sensor**
- T#7
- T#8

**Head Rub**
- Right (T#12)
- Left (T#11)

**Head Align**
- Right
- Left

**Tail Rub**
- Right (T#10)
- Left (T#9)

**Tail Align**
- Right
- Left

**Power**
- +24 V (F1)
- +24 V (F2)
- +24 V (F3)
TYPICAL SENSOR PLACEMENT FOR ENCLOSED BELT CONVEYORS

SPEED MONITORING
Qty 1 - One sensor located on either side of the tail or boot shaft.

BEARING TEMPERATURE
Qty. 4 - One sensor for the bearings at each end of the drive and tail shafts.

BELT MISALIGNMENT
Qty. 4 - Sensors work in pairs, one for each side of the belt on the drive and tail sections.

PLUG INDICATION
Qty. 1 - One sensor located near the top of the drive section by the discharge.

TAIL PULLEY MISALIGNMENT
Qty. 2 - One sensor located on each side of the housing on the conveyor tail section.
13. SENSOR WIRING DIAGRAM WITH 6 RUB BLOCKS, 4 BEARING TEMPERATURE SENSORS AND 2 LUG STYLE TAIL PULLEY ALIGNMENT SENSORS -

- Speed Sensor: White, Blue, Brown, Black
- Pulley Sensor: White
- Plug Sensor: Black, Brown
- Head Rub - Right (T#12): Gray
- Head Rub - Left (T#11): Black
- Head Align - Right: Blue
- Head Align - Left: Black
- Tail Rub - Right (T#10): Black
- Tail Rub - Left (T#9): Brown
- Tail Align - Right: Blue
- Tail Align - Left: Black
- +24 V (F1): Red
- +24V (F2): Black, Brown
- +24V (F3): Black, Brown, Yellow, Orange
- Bearing Temp Sensor (T#1): Green
- Bearing Temp Sensor (T#2): Gray
- Bearing Temp Sensor (T#3): Green
- Bearing Temp Sensor (T#4): Orange
- Bearing Temp Sensor (T#5): Orange
- Bearing Temp Sensor (T#6): Orange
- Ambient Sensor 1 (T#7): Yellow
- Ambient Sensor 2 (T#8): Yellow
- 0 VDC: Black, Brown
- 0 VDC: Black, Brown, Red
- 0 VDC: Black, Brown, Red
- 0 VDC: Black, Brown, Red
- 0 VDC: Black, Brown, Red

PAGE 23
14. SENSOR WIRING DIAGRAM WITH TOUCHSWITCHES, 4 BEARING TEMPERATURE SENSORS AND 2 LUG STYLE TAIL PULLEY ALIGNMENT SENSORS -
TYPICAL SENSOR PLACEMENT FOR DRAG CHAIN CONVEYORS

SPEED MONITORING
Qty 1 - One sensor located on either side of the tail or boot shaft.

BEARING TEMPERATURE
Qty. 4 - One sensor for the bearings at each end of the drive and tail shafts.

SLACK CHAIN DETECTION
Qty. 1 - One motion alignment sensor near the drive end.

PLUG INDICATION
Qty. 1 - One sensor located near the top of the drive section by the discharge.
15. SENSOR WIRING DIAGRAM FOR SLACK CHAIN DETECTION WITH PLUG SWITCH -

<table>
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<th>Description</th>
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<tr>
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<tr>
<td>42</td>
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<td>Blue</td>
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<tr>
<td>41</td>
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<tr>
<td>40</td>
<td>Head Rub - Right (T#12)</td>
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<tr>
<td>39</td>
<td>Head Rub - Left (T#11)</td>
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<tr>
<td>38</td>
<td>Head Align - Right</td>
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<tr>
<td>37</td>
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</tr>
<tr>
<td>36</td>
<td>+24 VDC (F1)</td>
<td>Purple</td>
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</tbody>
</table>

**X** No Connection
Insulate and Do **NOT** Connect

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<tr>
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<tr>
<td>33</td>
<td>Tail Rub - Left (T#9)</td>
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<td>Black</td>
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<tr>
<td>31</td>
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<tr>
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<td>Ambient Sensor 1 (T#7)</td>
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<tr>
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<td>+24V (F3)</td>
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16. SENSOR WIRING DIAGRAM FOR SLACK CHAIN DETECTION WITHOUT PLUG SWITCH -

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<td>Head Align - Left</td>
</tr>
<tr>
<td>36</td>
<td>+24 VDC (F1)</td>
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<td>Tail Rub - Left (T#9)</td>
</tr>
<tr>
<td>32</td>
<td>Tail Align - Right</td>
</tr>
<tr>
<td>31</td>
<td>Tail Align - Left</td>
</tr>
<tr>
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<td>+24 VDC (F2)</td>
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</tr>
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<td>Bearing Temp Sensor (T#5)</td>
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<td>Bearing Temp Sensor (T#4)</td>
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<td>Ambient Sensor 1 (T#7)</td>
</tr>
<tr>
<td>20</td>
<td>+24V (F3)</td>
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